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Monoclonal mouse antibodies raised against human lung carcinoma.

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We have evaluated approximately 10,000 monoclonal antibodies (MoAb) resulting from 25 hybridizations of spleen cells from mice immunized with cells from human non-small cell lung carcinoma or fetal lung. The spleen cells were hybridized with NS-1 myeloma cells, and the resulting hybridomas were screened for production of MoAb to non-small cell lung carcinoma by binding assays with either cell extracts or cells growing in culture, followed by immunohistology on frozen sections. Fourteen MoAb had relative specificity for non-small cell lung carcinoma versus normal tissues. Three of these MoAb (L3, L6, L17) also reacted with most carcinomas of the breast and colon, and two MoAb (L20 and L22) reacted with the four samples of small cell lung carcinoma tested. No MoAb defined an antigen of absolute tumor specificity, and no MoAb reacted substantially more with adenocarcinoma than squamous cell carcinoma of the lung (or vice versa). Five MoAb were Ig G1, two were Ig G2a, and the remaining seven were Ig M. Seven MoAb (L5, L6, L15, L17, L20, L22, L23) could bind to the cell surface. Three MoAb (L6, L15, L17) defined carbohydrate antigens, and three (L3, L5, L20) were to protein antigens, while the antigens to which the remaining MoAb are directed have not been identified. Six MoAb could bind to tumor cells in Carnoy-fixed paraffin-embedded sections. An intercellular variability in antigen expression was detected with all 14 MoAb. At least two of the MoAb, L6 and L20, are good candidates for preclinical testing in view of their high level of tumor selectivity, as shown by both immunohistology and binding assays with living cells.

PMID: 3731064